

WHAT IS CLAIMED IS:

1. A transceiver for dual-mode radio communications, comprising:
means for establishing a bi-directional link (408) for exchanging control
5 information; and
a high data rate (high-rate) transmitter (506) coupled with a uni-directional
link for transmitting user information if the transceiver (500) is primarily a
transmitter of user information; or
a high data rate receiver (556) coupled with the uni-directional link for
10 receiving user information if the transceiver (500) is primarily a receiver of user
information.
2. The transceiver of claim 1, further comprising:
a return channel utilizing a low-data rate (low-rate) interface for supporting
15 the user information transmissions over the high-rate link.
3. The transceiver of claim 1, further comprising:
means for carrying data link control and media access layer on a high-rate
physical channel in one direction; and
20 means for carrying the data link control and media access layer in the
reverse direction on a conventional physical channel.
4. The transceiver of claim 1, wherein the dual mode transceiver comprising a
high-rate transmitter further comprises:
25 a basic receiver section (502);
a basic transmitter section (504); and
a high-rate transmitter section (506).
5. The transceiver of claim 1, wherein the dual mode transceiver comprising a
30 high-rate receiver further comprises:
a basic receiver section (554);
a basic transmitter section (552); and

a high-rate receiver section (556).

6. The transceiver of claim 2, further comprising:
means for splitting forward and return transmissions at Data Link Control
5 (DLC) layer wherein the high-rate section of the transceiver is operable on one
Media Access Control (MAC) layer and the low-rate section is operable on a
second MAC layer.
7. The transceiver of claim 2, further comprising:
10 means for splitting forward and return transmissions at the MAC layer
wherein the high-rate section of the transceiver is operable on one physical (PHY)
layer and the low-rate section is operable on a second PHY layer.
8. The transceiver of claim 7, wherein the transceiver informs other users on
15 the high-rate channel that the transceiver will respond on the low-rate channel to
high-rate transmission.
9. A method of asymmetric communications via a transceiver, comprising:
exchanging control information over a bi-directional link;
20 transmitting user information utilizing a high-rate transmitter via a uni-
directional link if the transceiver is primarily a transmitter of user information; and
receiving the user information utilizing a high-rate receiver via the uni-
directional link if the transceiver is primarily a receiver of the user information.
- 25 10. The method of claim 9, further comprising:
supporting the user information transmissions over the high-rate link with a
return channel utilizing a low-data rate (low-rate) interface.
11. The method of claim 9, further comprising:
30 carrying data link control and media access layer on the high-rate physical
channel in one direction, wherein the conventional physical channel carries the
data link control and media access layer in the reverse direction.

12. The method of claim 9, wherein the dual mode transceiver comprising a high-rate transmitter further comprises:

5 receiving narrowband transmissions in a basic receiver section;
transmitting narrowband transmissions in a basic transmitter section; and
transmitting wideband transmissions in a high-rate transmitter section.

13. The method of claim 9, wherein the dual mode transceiver comprising a high-rate receiver further comprises:

10 receiving narrowband transmissions in a basic receiver section;
transmitting narrowband transmissions in a basic transmitter section; and
receiving wideband transmissions in a high-rate receiver section.

14. The method of claim 10, further comprising

15 splitting forward and return transmissions at Data Link Control (DLC) layer
wherein the high-rate section of the transceiver is operable on one Media Access
Control (MAC) layer and the low-rate section is operable on a second MAC layer.

15. The method of claim 10, further comprising

20 splitting forward and return transmissions at the MAC layer wherein the
high-rate section of the transceiver is operable on one physical (PHY) layer and
the low-rate section is operable on a second PHY layer.

16. The method of claim 15, further comprising

25 informing other users on the high-rate channel that the transceiver will
respond on the low-rate channel to high-rate transmission.